



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,116	09/04/2001	Kyeong Jin Kim	8733.450.00	1729
30827	7590	11/26/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			BOOTH, RICHARD A	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2812	

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,116

Applicant(s)

KIM, KYEONG JIN

Examiner

Richard A. Booth

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 USC 102(b) as being anticipated by Kim et al., GB 2,343,012A.

Kim et al. shows the invention as claimed including a multi-domain device, comprising: first and second substrates (31,33); data and gate lines on the first substrate in first and second directions to define a plurality of pixel regions; a pixel electrode 13 in at least one pixel region, having at least one slit pattern 19; a dielectric frame 41 within the pixel regions on the second substrate and formed overlying the common electrode 17 to define a plurality of domains (see page 9, lines 3-7); and a liquid crystal layer between the first and second substrates including a chiral dopant (see page 8, line 7 to page 11, line 12).

Note that the dielectric frame will inherently block at least a portion of the light which is transmitted therethrough and furthermore that the dielectric frame can be made of carbon black and a mixture of either acrylic resin or polyimide which inherently serves as a light shielding layer due to the presence of the carbon black (see page 24, lines 11-18).

With respect to claim 2, the TFT is formed on the pixel region which is at a portion between the gate and data lines (see page 1, lines 17-22).

Art Unit: 2812

Concerning claims 3-5 and 11-12, note that the dielectric frame can contain BCB or acrylate (see page 3, lines 25-30), a material with a dielectric constant the same or smaller than the liquid crystal layer (see page 10, line 27 to page 11, line 2), or carbon black (see page 24, lines 11-18).

With respect to claims 6-8 and 13-14, note the presence of color filter layers 23 and a common electrode 17 on the second substrate, an alignment layer, and phase difference film 29 (see page 12, lines 1-8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-20 are rejected under 35 USC 103(a) as being unpatentable over Kim et al., GB 2,343,012A in view of den Boer et al., U.S. Patent 5,656,824.

Kim et al. is applied as above but fails to expressly disclose a U-shaped TFT with a source electrode surrounding the drain electrode in a U shape.

Den Boer et al. discloses a TFT 80 with a U-shaped channel where the drain 24 surrounds the source 22 in a U-shape (see fig. 7 and col. 9-line 40 to col. 10-line 3). Note that a field effect transistor based device is symmetrical so the source and drain are interchangeable. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the device of Kim et al. so as to form a TFT that is U-shaped because this will eliminate overlay errors which occurred in previous TFT devices.

Response to Arguments

Applicant's arguments filed 11/10/04 have been fully considered but they are not persuasive. Applicant argues that the limitation "at least a portion of the dielectric frame blocking light as a light shielding layer and the dielectric frame corresponding to a boundary portion of each domain". Note that the limitation with respect to the dielectric frame serving as a light shielding layer is addressed in the above rejection of claims 1-15. Concerning the dielectric frame corresponding to a boundary portion of each domain, note that Kim et al. discloses that the dielectric frame controls alignment direction of liquid crystal molecules of the liquid crystal layer (see page 9, lines 3-7 and figures 4A-11C which shows the dielectric frame being used as a boundary portion of each domain).

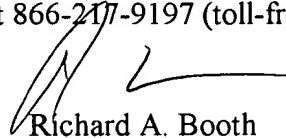
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A. Booth whose telephone number is (571) 272-1668. The examiner can normally be reached on Monday-Thursday from 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (571) 272-1679. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2812

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard A. Booth
Primary Examiner
Art Unit 2812

November 23, 2004